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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,785	01/04/2002	John H. Collins	7668	3874

7590 06/19/2003

ONDEO Nalco Company
Patent & Licensing Department
ONDEO Nalco Center
Naperville, IL 60563-1198

EXAMINER

DRODGE, JOSEPH W

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/035,785

Applicant(s)
COLLINS ET AL

Examiner
JOSEPH DRODGE

Art Unit
1723



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 27, 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 U.S.C. § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was

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made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daigger et al patent 6,517,723 in view of Pescher et al patent 5,914,040.

In the primary Embodiment of Daigger et al, the patent discloses treatment of activated sludge using a first bioreactor comprising an immersed membrane filter, followed by a second bioreactor having a second immersed membrane filter. In such second bioreactor, membrane filtration is preceded by preliminary treatment including addition of filter aid, oxidant supply and coagulant (see especially column 2, line 59 through column 3, line 23 and column 6, line 64 through column 7, line 24). The coagulant is stated in column 7 as being added in order to aid in the removal of suspended solids , phosphorous and other substances.

The claims firstly differ in requiring that the coagulant be added to sludge, not wastewater as in such primary embodiment of Daigger et al. However, Daigger et al also disclose combining of the two bioreactors into a single bioreactor for treating the sludge (column 4, line 66 through column 5, line 3). At the time the present invention was made, it would have been obvious to one of ordinary skill in this art to have combined features of the Daigger et al embodiment requiring separate, sequential bioreactors, including the coagulant addition step, into the embodiment of Daigger et al featuring one combined bioreactor, so as to simplify treatment plant construction and maintenance and reduce required process volumes [Daigger et al column 4, lines 20-25], while continuing to efficiently remove suspended solids and other substances.

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The claims also differ from both Daigger et al in requiring the coagulant/flocculent to comprise one or more *cationic* polymers. However, Pescher et al teach treatment of media or effluent containing human or animal waste in a process sequentially employing oxidation, flocculation and membrane filtration. A mixture of inorganic and anionic and cationic type polymer coagulants are employed (see column 2, lines 15-49; column 3, lines 17-24 and column 6, lines 1-48; column 4, line 33-column 5, line 3 which detail specific cationic polymers). At the time the present invention was made, it would have been obvious to one of ordinary skill in this art to have augmented the Daigger et al, by utilizing cationic polymer type flocculants, as suggested by Pescher et al, so as to facilitate a more complete solids/liquid separation in the membrane filtration stage by virtue of the mechanism of the polyelectrolyte charge of these type coagulants, thus ensuring production of a clarified liquid permeate stream reusable in a plurality of applications.

Regarding claims 2-7, see the specific polymers taught in column 4, lines 37-64 of Pescher et al, as to claims 2, 3 and 6, the recited molecular weights and cationic charges are inherent since Pescher et al teach the exact polymers and co-polymers claimed in claims 4, 5 and 7.

Response to Arguments

4. Applicant's arguments filed on May 27, 2003 have been fully considered but they are not persuasive.

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Firstly, it is argued that Daigger et al does not disclose adding coagulant to the waste being treated when it is in the form of activated sludge. However, it is submitted that such teaching of Daigger et al would be obvious, encompassing incorporating the feature of coagulant addition of the primary embodiment of Daigger et al featuring two sequential bioreactors into the embodiment wherein the two sequential bioreactors are combined into a single bioreactor.

Arguments directed to the Cote et al reference are now moot, since Cote et al is no longer being applied.

It is also argued that Pescher teaches addition of coagulant to a wastewater after, rather than prior to, membrane filtration, and also is directed towards treatment of water rather than activated sludge. However, it is submitted that Pescher is primarily relied upon for teaching that coagulant treatment should comprise utilizing cationic type polymer. Further, Pescher suggests treatment of effluent starting material of various types of organic semi-solid waste, as well as waste water (column 6, lines 55-62).

This rejection is *not made final*, since a distinctly different interpretation of the Daigger et al patent is employed in the U.S.C. 103 rejection.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph W. Drodge whose telephone number is (703) 308-0403. The examiner can normally be reached on Monday-Friday from approximately 8:30 AM - 4:45 PM.

The fax phone number for this Group is (703) 872-9310 or (703) 872-9311 for after final submissions. When filing a FAX in Tech Center 1700, please indicate in the Header (upper right)

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“Official” for papers that are to be entered into the file, and “Unofficial” for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.


Joseph W. Brodge
Primary Examiner
Art Unit 1723

JWD
June 17, 2003